REMARKS

Claims 11-36 are active in the present application. Claims 22-36 are supported by the specification at pages 2-36 and Claim 11-21. Claims 11-15 and 17 have been amended for clarity. No new matter is believed to have been added to this application by these amendments. Favorable reconsideration is respectfully requested.

The rejection of Claims 11, 12, and 18-21 under 35 U.S.C. § 112, first paragraph ("written description") is traversed.

The Office has alleged that the specification fails to provide an adequate number of representative species to support the genus provided in the present claims (page 3 of the Official Action, Paper No. 10). Applicants respectfully disagree.

Applicants direct the Examiner's attention to MPEP § 2163.02:

> An objective standard for determining compliance with the written description requirement is, "does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed." *In re Gostelli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989).

The claims recite that protein whose activity is increased and which comprises a specific amino acid sequence: SEQ ID NO:4 (as in Claim 11). The present application provides a description of the amino acid sequences of the protein, examples of DNA molecules encoding the protein and methods for increasing or enhancing the activity of the protein are described in the specification on pages 14-17, for example, through amplification of copy number and promoter substitution.

Therefore, the present claims are adequately described in the specification within the meaning of 35 U.S.C. § 112, first paragraph and as such withdrawal of this ground of rejection is requested.

The rejection of Claims 11, 12 and 18-21 under 35 U.S.C. § 112, first paragraph ("enablement") is traversed.

The Office has taken the position that while the specification is enabled for bacterium transformed with the polynucleotide of SEQ ID NO:3 or SEQ ID NOS:1 and 3, the specification does not enable one of skill in the art to make and/or use the invention as claimed (page 4-5 of the Office Action, Paper No. 10).

Applicants respectfully disagree and direct the Examiner's attention to the relevant section of the MPEP which discusses enablement:

> The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation MPEP § 2164.01

Applicants submit that one of skill in the art could obtain and use bacterium having increased protein activity based on the disclosure provided in the specification. Coupled with the standard knowledge available in the art the present specification clearly enables the skilled artisan to make and/or use the invention.

The specification discloses that increasing expression of the DNA coding for RhtB or RhtC yields an increased activity in the bacterium expressing the DNA thereby increasing L-homoserine or L-threonine resistance (see page 6, line 22 to page 7, line 5). Therefore, the skilled artisan could screen or isolate other bacterium expressing the protein (comprising SEQ ID NO:4) by determining the resistance properties to L-homoserine or L-threonine (see page 7, lines 7-18: "L-threonine resistance means" and "L-homoserine resistance means"); and/or amino acid production (see pages 21-22 "Method for producing an amino acid").

The Office has alleged that the specification provides only transformation of bacterim with the DNA coding for the proteins (page 5, second paragraph). This allegation, however,

is incorrect. The protein activity may be enhanced by increasing the copy number of the DNA in the cell, or by substitution of the promoter sequence of the gene encoding the protein in the chromosome of the bacterium (see pages 14-16). Various multi-copy vectors are disclosed on page 16, lines 1-11) and methods of replacing a promoter sequence of a gene on a chromosome are well-known in the art, as exemplified in U.S. Patent No. 5,272,071, which was submitted to the Office on February 4, 2002.

Therefore, the present claims are deemed to be fully enabled by the specification and the common knowledge available in the art and as such withdrawal of this ground of rejection is requested.

The rejection of Claims 11-15 under 35 U.S.C. § 112, second paragraph is traversed.

Claims 11-15 have been amended to recite "modified to increase,"which is different from an unmodified bacterium. Therefore the phrase "modified to increase" is relative to those bacteria that have not been modified to increase protein activity. A description of such modifications is found in the present specification on pages, 14-17.

Claims 14 and 15 have been amended to recite DNA coding for proteins comprising the amino acid sequences SEQ ID NO:4 and 2, respectively.

Withdrawal of this ground of rejection is requested.

Applicants submit that the application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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IN THE CLAIMS

Please amend the claims as follows:

--11. (Amended) An isolated bacterium belonging to the genus *Escherichia*, wherein [L-threonine resistance of] said bacterium is modified to increase [increased by increasing] an activity of a protein which makes the bacterium harboring the protein L-threonine-resistant, and wherein the protein comprises the amino acid sequence shown in SEQ ID NO: 4.

12. (Amended) The bacterium according to claim 11, wherein said bacterium is further modified to increase [L-homoserine resistance of said bacterium is further increased by increasing] an activity of a protein which makes the bacterium harboring the protein [L-threonine-resistant] L-homoserine-resistant, and wherein the protein comprises the amino acid sequence shown in SEQ ID NO: 2.

13. (Amended) The bacterium according to claim 11, wherein said bacterium is modified to increase an activity of the protein which makes the bacterium harboring the protein L-threonine-resistant, [is increased] by transformation of said bacterium with DNA coding for the protein.

14. (Amended) The bacterium according to claim 12, wherein said bacterium is modified to increase an activity of the protein which makes the bacterium harboring the protein L-threonine-resistant, [is increased] by transformation of said bacterium with DNA coding for the protein which comprises the amino acid sequence of SEQ ID NO: 4.

15. (Amended) The bacterium according to claim 12, wherein said bacterium is modified to increase an activity of the protein which makes the bacterium harboring the

protein L-homoserine-resistant, [is increased] by transformation of said bacterium with DNA coding for the protein which comprises the amino acid sequence of SEQ ID NO: 2.

17. (Amended) [The DNA of claim 16, which is a DNA defined] An isolated DNA which is defined in the following (a) or (b):

(a) a DNA which comprises the nucleotide sequence of nucleotide numbers 187 to 804 in SEQ ID NO: 3; or

(b) a DNA which [is hybridizable with a nucleotide sequence of nucleotide numbers] hybridizes to nucleotides 187 to 804 [in] of SEQ ID NO: 3 under a stringent condition, and encodes a protein having an activity of making a bacterium having the protein L-threonine-resistant, wherein the stringent condition is a condition in which washing is performed at 60°C, and at a salt concentration corresponding to 1 x SSC and 0.1% SDS.--

Claims 22-36 (Newly added)